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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/731,025

Applicant(s)

SHIN, JUN YONG

Examiner

USMAN KHAN

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-7,10-20,22-24,28-36 and 39-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-7,10-20,22-24,28-36 and 39-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsman's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/20/2009 has been entered.

Response to Arguments

Applicant's arguments filed on 04/20/2009 with respect to claims 1, 10, 14, 24, 29, and 35 have been considered but are not persuasive. Additionally newly added claims 39 - 50 are rejected as discussed in this office action.

Please refer to the following office action, which clearly sets forth the reasons for non-persuasiveness.

Regarding claim 1:

Applicant argues that the applied references do not teach or suggest at least these features of independent claim 1, which may include features from previous dependent claims 8 and 9. More specifically, the Office Action cites Sotoda's FIGs. 11 and 16 and col. 12, line 49-col. 15, line 6 as teaching extracting a color average value and a deviation of a photographic object within the photographic screen. However, Sotoda does not teach or suggest determining a size of photographic object based on the extracted color average value and the extracted deviation for each of the upper line

and the lower line. The Office Action also cites various sections as teaching setting a zoom ratio. However, Sotoda does not teach or suggest setting a zoom ratio by comparing the determined size of the photographic object with a reference value or with a preset size. Additionally, the Office Action states (on pages 6 and 8) that Fujii's FIGs. 17-27 and 29- 30 discloses searching a center search line of a photographic screen wherein the center search line comprises a horizontal axis including an approximate center of the photographic screen. Fujii merely discloses a cursor CR that corresponds to a focused point on an LCD 10. See paragraph [0052]. A cursor display position control unit 21 lg may alter the display position of the AF cursor CR on the LCD 10. See paragraphs [0100]-[0101]. This does not teach or suggest searching a center search line of a photographic screen, wherein the center search line comprises a horizontal axis at an approximate center of the photographic screen. The cursor CR does not teach or suggest a horizontal axis at an approximate center of the photographic screen.

In response, the examiner kindly notes that as discussed in the previous office action in figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; also column 7 lines 17 et seq. Sotoda teaches that the size of an object is taken into account using the same signal based indirectly on the color average value and deviation signal. Also, as discussed in figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; also, column 7 lines 17 et seq. Sotoda teaches that the zoom ratio is dependent on the size of the object. Finally, as taught in figures 17 – 27 and 29 - 30; item CR Fujii et al. teaches that CR makes a vertical and horizontal axis with references to the sides of the screen and center search

line.

Regarding claims 14 and 24:

Applicant argues that Sotoda and Fujii do not teach or suggest determining a zoom ratio by comparing the determined size of the photographic object and a reference value. The Office Action (on page 4) also states that Sotoda's FIGs. 12a-12b teach alternatively searching lines with a predetermined gap up and down one line by one line. This does not teach or suggest searching a plurality of lines of a photographic screen by alternatively searching lines with a pre-determined gap up or down one line by one line. This also does not suggest any type of predetermined gap up or down one line by one line.

In response, the examiner kindly notes that as discussed in the previous office action figure 12a – 12b items 33 and 35 Sotoda teaches that the upper portion line and lower portion line of items 33 and 35 are read; hence lines will be read one line by one line with a pre-determined gap. Also, as discussed in figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; also, column 7 lines 17 et seq. Sotoda teaches that the zoom ratio is dependent on the size of the object.

Applicant argues that Sotoda and Fujii do not teach or suggest comparing the determined size of the face region with a reference value, calculating a zoom ratio based on the comparing, and applying the calculated zoom ratio to the photographic screen. Sotoda and Fujii also do not teach or suggest searching a center search line of

a photographic screen to detect a photographic object, wherein the center search line is approximately at a center of the photographic screen.

In response, the examiner kindly notes that as discussed in the previous office action figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35; also figures 11 and 16 and column 12 lines 49 et seq. and column 15 liens 6 et seq.; range of colors and area recognition also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 et seq. and column 15 liens 6 et seq.; means for recognizing an object (a human face, for example) Sotoda et al. teaches determining a size of the face region. Also, as discussed in figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; also, column 7 lines 17 et seq. Sotoda teaches the zoom process. Also, as taught in figures 17 – 27 and 29 - 30; item CR Fujii et al. teaches that CR makes a vertical and horizontal axis with references to the sides of the screen and center search line.

Regarding claim 35:

Applicant argues that Sotoda does not teach or suggest comparing the determined size of the text with a reference value, calculating a zoom ratio based on the comparing and applying the calculated zoom ratio to the photographic screen. Sotoda also does not relate to detecting text, an average value of a stroke thickness of text, and/or a size of text.

In response, the examiner kindly notes that as discussed in the previous office action figures 11 and 16 and column 12 lines 49 et seq. and column 15 lines 6 et seq.; range of colors and area recognition also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 et seq. and column 15 lines 6 et seq.; means for recognizing an object (a human face, for example) but can be anything in the region even text as taught by Sotoda. Sotoda et al. teaches determining a size of an object region but can be anything in the region including text. Also, as discussed in figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; also, column 7 lines 17 et seq. Sotoda teaches the zoom process.

Regarding claims 10 and 29:

Applicant argues that these claims are not taught in the cited references because they fail to teach the number of upper and lower search lines comprises performing a line-scanning, and searching lines set with a predetermined gap up and down one line by one line.

In response, the examiner kindly notes the discussions of the independent claims above that talk about this limitation.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 42 – 43 and 49 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Newly added claims 42 – 43 and 49 claim different regions in a first and second mode; Also, portion of pixels and all of the pixels are counted; Also, pixels along a line within the region. These are not disclosed in the original submission dated 12/10/2003. This claim is subjected to new subject matter rejection. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 14, 16 - 18, 22 – 23, and 39 - 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Sotoda et al. (US patent No. 5,835,641).

Regarding **claim 14**, Sotoda et al. teaches a zoom method (column 7 lines 17 *et seq.*; zoom control means) comprising:

searching a plurality of lines of a photographic screen (figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35) alternatively searching lines with a predetermined gap up and down one line by one line (figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35; this portion of the image is scanned);

for each of the plurality of lines, extracting a color average value and a deviation of a photographic object on the photographic screen (figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; range of colors and area recognition);

determining a size of a photographic object based on the extracted average value and the extracted deviation for each of the plurality of lines (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; also column 7 lines 17 *et seq.*; size);

determining a zoom ratio by comparing the determined size of the photographic object and a reference value (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; also column 7 lines 17 *et seq.*; size); and applying the determined zoom ratio to the photographic object (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 - 135).

Regarding **claim 16**, as mentioned above in the discussion of claim 14, Sotoda et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches preprocessing the photographic screen according to a set photographic mode

(column 2 lines 34 *et seq.* camera searches for printed labels 35 with coding 36 with language).

Regarding **claim 17**, as mentioned above in the discussion of claim 16, Sotoda et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches that the photographic mode comprises one of a portrait mode and a text mode (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; also column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; means for recognizing an object (a human face, for example)).

Regarding **claim 18**, as mentioned above in the discussion of claim 16, Sotoda et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches preprocessing the photographic screen comprises performing one of a smoothing method and a blurring method for minimizing error generation (figure 10 item 25).

Regarding **claim 22**, as mentioned above in the discussion of claim 14, Sotoda et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches converting into a user hand mode so that a user can perform a direct zoom processing when the photographic object is not a normal region (column 8 lines 43 – 56, column 14 lines 21 – 27, column 22 lines 15 - 23; user controlled).

Regarding **claim 23**, as mentioned above in the discussion of claim 14, Sotoda et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches the reference value comprises one of a value preset manually by a user and a value preset based on a screen contrast (column 12 lines 22 *et seq.*; contrast).

Regarding **claim 39**, Sotoda et al. teaches a zoom method in a digital camera comprising: determining which one of at least two modes has been selectively set in the digital camera (column 18 lines 44 – 49; two modes), wherein the at least two modes includes a first mode and a second mode (column 18 lines 44 – 49; two modes), the first mode to zoom-process (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; also column 7 lines 17 *et seq.*; size) at least one photographic object in a different manner from the second mode (column 18 lines 44 – 49; normal and static); recognizing the at least one photographic object included in a photographic image based on the set mode (figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; range of colors and area recognition; also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; also column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; means for recognizing an object (a human face, for example)); and zooming the photographic image based on a size of the recognized object (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; also column 7 lines 17 *et seq.*; size).

Regarding **claim 40**, as mentioned above in the discussion of claim 39, Sotoda et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches the recognizing comprises: detecting a region corresponding to the at least one photographic object; and calculating a size of the region according to a number of pixels occupied by the at least one photographic object (figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; range of colors and area recognition; also column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; means for recognizing an object (a human face, for example); also column 7 lines 17 *et seq.*; size).

Regarding **claim 41**, as mentioned above in the discussion of claim 40, Sotoda et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches a zoom-processing speed of the first mode is slower than a zoom-processing speed of the second mode (column 8 lines 11 – 19; speed of system).

Regarding **claim 42**, as mentioned above in the discussion of claim 41, Sotoda et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches that all pixels distributed within the region are counted in the first mode while a portion of pixels distributed within the region is counted in the second mode (column 8 lines 43 – 56, column 14 lines 21 – 27, column 22 lines 15 - 23; user controlled also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also

column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; means for recognizing objects (human face, for example); also column 7 lines 17 *et seq.*; size).

Regarding **claim 43**, as mentioned above in the discussion of claim 42, Sotoda et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches that the portion of pixels includes pixels along a line within the region (column 8 lines 43 – 56, column 14 lines 21 – 27, column 22 lines 15 - 23; user controlled also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; means for recognizing objects (human face, for example); also column 7 lines 17 *et seq.*; size).

Regarding **claim 44**, as mentioned above in the discussion of claim 40, Sotoda et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches that the detecting is based on a color average value and a deviation of the at least one photographic object (figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; range of colors and area recognition).

Regarding **claim 45**, as mentioned above in the discussion of claim 40, Sotoda et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches at least one photographic object includes a human face (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on

specific region; also column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; means for recognizing an object (a human face, for example)).

Regarding **claim 46**, as mentioned above in the discussion of claim 40, Sotoda et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches preprocessing the photographic image before recognizing the at least one photographic object so as to minimize noise in the photographic image (column 12 lines 59 - 65).

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4 - 7, 9 - 11, 13, 15, 19 - 20, 24 and 28 - 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sotoda et al. (US patent No. 5,835,641) in view of Fujii et al. (US PgPub No. 2002/0122121).

Regarding **claim 1**, Sotoda et al. teaches a zoom method (column 7 lines 17 *et seq.*; zoom control means) comprising: searching a upper and lower search lines from the center search line (figure 12a - 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35)

extracting a color average value and a deviation of a photographic object within the photographic screen (figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; range of colors and area recognition) for each of the upper search line and the search lower line (figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35); determining a size of photographic object based on the extracted color average value and the extracted deviation for each of the upper line and the lower line (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; also column 7 lines 17 *et seq.*; size); and setting a zoom ratio by comparing the determined size of the photographic object with a reference value or with a preset size (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; also column 7 lines 17 *et seq.*; size).

However, Sotoda et al. fails to disclose searching a center search line of a photographic screen and the center search line comprises a horizontal axis including an approximate center of the photographic screen and a reference for starting an initial line scanning. Fujii et al., on the other hand teaches searching a center search line of a photographic screen and the center search line comprises a horizontal axis including an approximate center of the photographic screen and a reference for starting an initial line scanning.

More specifically, Fujii et al. teaches searching a center search line of a photographic screen and the center search line comprises a horizontal axis including an approximate center of the photographic screen and a reference for starting an initial line scanning (figures 17 – 27 and 29 - 30; item CR).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Fujii et al. with the teachings of Sotoda et al. to provide better operability as taught in paragraphs 0009 – 0011 of Fujii et al.

Regarding **claim 4**, as mentioned above in the discussion of claim 1, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches wherein calculating the size of the photographic object comprises: analogizing a size of a photographic object by calculating the average value and the deviation (figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; range of colors and area recognition; also column 7 lines 17 *et seq.*; size); and judging whether the photographic object is a normal region corresponding to a photographic mode (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; means for recognizing an object (a human face, for example)).

Regarding **claim 5**, as mentioned above in the discussion of claim 4, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches converting a digital camera into a user hand mode so that a user can perform a direct zoom processing when the photographic object is not a normal

region (column 8 lines 43 – 56, column 14 lines 21 – 27, column 22 lines 15 - 23; user controlled).

Regarding **claim 6**, as mentioned above in the discussion of claim 1, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Fujii et al. teaches that searching the center search line comprises: setting a photographic mode (paragraphs 0053 – 0054 and 0095); preprocessing the photographic screen (figures 17 – 27 and 29 - 30; item CR); and performing a line scanning at a region of the center search line (figures 17 – 27 and 29 - 30; item CR).

Regarding **claim 7**, as mentioned above in the discussion of claim 6, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches preprocessing the photographic screen comprises performing one of a smoothing method and a blurring method for minimizing error generation (figure 10 item 25).

Regarding **claim 9**, as mentioned above in the discussion of claim 1, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches searching a number of upper and lower search lines from the center search line from the center search line (figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35); extracting the color average value and the deviation of the photographic object for each of the searched

upper search lines and the searched lower search lines (figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; range of colors and area recognition).

However, Sotoda et al. fails to disclose detecting the photographic object by the searching of the center search line. Fujii et al., on the other hand teaches detecting the photographic object by the searching of the center search line.

More specifically, Fujii et al. teaches detecting the photographic object by the searching of the center search line (figures 17 – 27 and 29 - 30; item CR).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Fujii et al. with the teachings of Sotoda et al. to provide better operability as taught in paragraphs 0009 – 0011 of Fujii et al.

Regarding **claim 10**, as mentioned above in the discussion of claim 9, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches that searching the number of upper and lower search lines comprises performing a line-scanning (figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35; this portion of the image is scanned), and searching lines set with a predetermined gap up and down one line by one line (figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35; this portion of the image is scanned).

Regarding **claim 11**, as mentioned above in the discussion of claim 9, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Fujii et al. teaches when the photographic object is not detected (figures 17 – 27, 29 – 30, and more specifically figures 32 - 35; item CR), the method further comprises: resetting the center search line (figures 17 – 27, 29 – 30, and more specifically figures 32 - 35; item CR); resetting upper search lines and lower search lines based on the reset center search line (figures 17 – 27, 29 – 30, and more specifically figures 32 - 35; item CR); and searching the number of upper and lower search lines based on the reset search line (figures 17 – 27, 29 – 30, and 32 – 35; AU, AP, the upper portion line and lower portion line of the boxes AU and AP; also OB).

Regarding **claim 13**, as mentioned above in the discussion of claim 1, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches the reference value comprises one of a value manually preset by a user and a value preset based on a screen contrast (column 12 lines 22 *et seq.*; contrast).

Regarding **claim 15**, as mentioned above in the discussion of claim 14, Sotoda et al. teaches all of the limitations of the parent claim.

Additionally, Sotoda et al. teaches extracting a color average value and a deviation of a photographic object within the photographic screen (figures 11 and 16

and column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; range of colors and area recognition)

However, Sotoda et al. fails to disclose setting a center search line of the photographic screen, and wherein the extracting includes performing a line scan of the center search line. Fujii et al., on the other hand setting a center search line of the photographic screen, and wherein the extracting includes performing a line scan of the center search line.

More specifically, Fujii et al. teaches searching setting a center search line of the photographic screen, and wherein the extracting includes performing a line scan of the center search line (figures 17 – 27 and 29 - 30; item CR).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Fujii et al. with the teachings of Sotoda et al. to provide better operability as taught in paragraphs 0009 – 0011 of Fujii et al.

Regarding **claim 19**, as mentioned above in the discussion of claim 15, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Fujii et al. teaches the center search line comprises a horizontal axis at an approximate center of the photographic screen for performing a line scan in order to detect the photographic object (figures 17 – 27 and 29 - 30; item CR).

Regarding **claim 20**, as mentioned above in the discussion of claim 15, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Fujii et al. teaches comprising resetting the center search line when the photographic object is not detected along the center search line (figures 17 – 27, 29 – 30, and more specifically figures 32 - 35; item CR); wherein the extracting includes performing a line scan based on the reset center search line (figures 17 – 27, 29 – 30, and 32 – 35; AU, AP, the upper portion line and lower portion line of the boxes AU and AP; also OB).

Regarding **claim 24**, Sotoda et al. teaches a zoom method of a digital camera apparatus associated with a mobile communication terminal (column 7 lines 17 *et seq.*; zoom control means) the comprising: searching an upper search line to extract an average value and a deviation of a skin color of the photographic object (figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35; also figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; range of colors and area recognition also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; means for recognizing an object (a human face, for example)); searching a lower search line to extract an average value and a deviation of a skin color of the photographic object (figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35; also figures 11 and 16 and column 12 lines 49 *et seq.*

and column 15 liens 6 *et seq.*; range of colors and area recognition also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 *et seq.* and column 15 liens 6 *et seq.*; means for recognizing an object (a human face, for example)); and determining a size of a face region based on the extracted average value and the extracted deviation of the skin color for the upper search line and based on the extracted average value and the extracted deviation of the skin color for the lower search line (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; also column 7 lines 17 *et seq.*; size; also, figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35); comparing the calculated size of the face region with a reference value; and calculating a zoom ratio based on the comparison (figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 liens 6 *et seq.*; range of colors and area recognition also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 *et seq.* and column 15 liens 6 *et seq.*; means for recognizing an object (a human face, for example); also column 7 lines 17 *et seq.*; size); and applying the calculated zoom ratio to the photographic screen (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135).

However, Sotoda et al. fails to disclose searching a center search line of a photographic screen to detect a photographic object, wherein the center search line is approximately at a center of the photographic screen. Fujii et al., on the other hand

teaches searching a center search line of a photographic screen to detect a photographic object, wherein the center search line is approximately at a center of the photographic screen.

More specifically, Fujii et al. teaches searching a center search line of a photographic screen to detect a photographic object, wherein the center search line is approximately at a center of the photographic screen (figures 17 – 27 and 29 - 30; item CR).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Fujii et al. with the teachings of Sotoda et al. to provide better operability as taught in paragraphs 0009 – 0011 of Fujii et al.

Regarding **claim 28**, as mentioned above in the discussion of claim 24, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Fujii et al. teaches resetting a search line (figures 17 – 27, 29 – 30, and more specifically figures 32 - 35; item CR) and searching the reset search line (figures 17 – 27, 29 – 30, and 32 – 35; AU, AP, the upper portion line and lower portion line of the boxes AU and AP; also OB).

Regarding **claim 29**, as mentioned above in the discussion of claim 24, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches searching the upper search line and searching the lower search

line comprises alternatively searching lines set with a predetermined gap up and down one line by one line (figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35; this portion of the image is scanned).

Regarding **claim 30**, as mentioned above in the discussion of claim 24, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches determining the size of the face region comprises: determining an area of the face region by obtaining a number of pixels that exist within a range of a certain deviation from an average value of a skin color (figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; range of colors and area recognition; also column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; means for recognizing an object (a human face, for example); also column 7 lines 17 *et seq.*; size).

Regarding **claim 31**, as mentioned above in the discussion of claim 24, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. in teaches calculating the size of the face region comprises: analogizing a length of a longest search line as a face width by obtaining a length variation through search lines having a smaller gap than the upper and lower search lines (figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35; this portion of the image is scanned).

Regarding **claim 32**, as mentioned above in the discussion of claim 24, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches determining the size of the face region comprises judging whether a calculated face region is a normal photographic object (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; means for recognizing an object (a human face, for example); also column 7 lines 17 *et seq.*; size).

Regarding **claim 33**, as mentioned above in the discussion of claim 32, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches converting the digital camera into a user hand mode so that a user can perform a direct zoom processing when the determined face region is not a normal photographic object (column 8 lines 43 – 56, column 14 lines 21 – 27, column 22 lines 15 - 23; user controlled also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; means for recognizing an object (a human face, for example)).

Regarding **claim 34**, as mentioned above in the discussion of claim 24, Fujii et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches when plural skin colors more than a certain length exist and skin

colors of a same pattern (figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35; also figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 liens 6 *et seq.*; range of colors and area recognition also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 *et seq.* and column 15 liens 6 *et seq.*; means for recognizing an object (a human face, for example)) are detected at the search line and at adjacent upper and lower search lines (figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35), the method further comprises:

determining that a plurality of photographic objects exist (figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35; also figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 liens 6 *et seq.*; range of colors and area recognition also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 *et seq.* and column 15 liens 6 *et seq.*; means for recognizing an object (a human face, for example)); extracting an average value and a deviation of a skin color for each photographic object judged to be a face (figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35; also figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 liens 6 *et seq.*; range of colors and area recognition also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 *et seq.* and column 15 liens

6 *et seq.*; means for recognizing an object (a human face, for example)); determining an area of a face region by obtaining a number of pixels that exist within a range of a certain deviation from an average value of each skin color (column 8 lines 43 – 56, column 14 lines 21 – 27, column 22 lines 15 - 23; user controlled also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; means for recognizing objects (human face, for example); also column 7 lines 17 *et seq.*; size); and zooming a photographic screen with a preset zoom ratio based on the number and a face size of the photographic object (figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35; also figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; range of colors and area recognition also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; means for recognizing an object (a human face, for example)).

Regarding **claim 35**, Sotoda et al. teaches digital camera zoom method for a mobile communication terminal (column 7 lines 17 *et seq.*; zoom control means) the comprising:

detecting text (figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; range of colors and area recognition also figures 12 (a) item 33, figure

12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; also column 12 lines 49 *et seq.* and column 15 liens 6 *et seq.*; means for recognizing an object (a human face, for example) but can be any thing in the region even text; also column 7 lines 17 *et seq.*; size);

detecting an average value of a stroke thickness of the text by searching upper and lower search lines of the photographic screen (figure 12a – 12b items 33 and 35; the upper portion line and lower portion line of items 33 and 35 and figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 liens 6 *et seq.*; range of colors and area recognition also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 *et seq.* and column 15 liens 6 *et seq.*; means for recognizing an object (a human face, for example) but can be any thing in the region even text); and

determining a size of the text based on the determined average value of the stroke thickness of the text (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; also column 7 lines 17 *et seq.*; size);

comparing the calculated size of the text with a reference value and calculating a zoom ratio based on the comparison (figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 liens 6 *et seq.*; range of colors and area recognition and applying the zoom ratio to the photographic object also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 *et seq.* and column 15 liens

6 *et seq.*; means for recognizing an object (a human face, for example); also column 7 lines 17 *et seq.*; size)

applying the calculated zoom ratio to the photographic screen (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 - 135).

However, Sotoda et al. fails to disclose searching a center search line of a photographic screen. Fujii et al., on the other hand teaches searching a center search line of a photographic screen.

More specifically, Fujii et al. teaches searching a center search line of a photographic screen (figures 17 – 27 and 29 - 30; item CR).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Fujii et al. with the teachings of Sotoda et al. to provide better operability as taught in paragraphs 0009 – 0011 of Fujii et al.

Regarding **claim 36**, as mentioned above in the discussion of claim 35, Sotoda et al. in view of Fujii et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches zooming the photographic screen to a maximum degree and enlarging the text (figure 12c; also column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; means for recognizing an object (a human face, for example) but can be any thing in the region even text; also column 7 lines 17 *et seq.*; size).

Claims 47 - 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sotoda et al. (US patent No. 5,835,641) in view of Schaeffer et al. (US PgPub No. 2002/0013161).

Regarding **claim 47**, Sotoda et al. teaches a digital camera (figures 19, 25, and 27), comprising: the digital camera having a zoom function (column 7 lines 17 *et seq.*; zoom control means), wherein the zoom function has at least two modes including a first mode and a second mode (column 18 lines 44 – 49; two modes), the first mode to zoom-process (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; also column 7 lines 17 *et seq.*; size) at least one photographic object in a different manner from the second mode (column 18 lines 44 – 49; normal and static); a controller to control the digital camera (figure 9 items 5, 9, and 15); and a display screen to display information received via a photographic image captured by the digital camera under control of the controller (figure 19 item 63), wherein the controller comprises at least one algorithm to: determine which one of the at least two modes has been selectively set in the digital camera (column 18 lines 44 – 49; two modes); recognize the at least one photographic object included in a photographic image based on said set mode (figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; range of colors and area recognition; also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; also column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; means for recognizing an object (a human face, for example)); zoom the photographic image based on a size of the recognized object (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41,

and figure 34 items 131 – 135; also column 7 lines 17 *et seq.*; size); and display the zoomed photographic image on the display screen (figure 19 item 63).

However, Sotoda et al. fails to disclose mobile communication terminal having a digital camera, comprising: a wireless communication module to receive and transmit a radio frequency; a controller to control the wireless communication module; and a display screen to display information received via the wireless communication module under control of the controller. Schaeffer et al., on the other hand teaches mobile communication terminal having a digital camera, comprising: a wireless communication module to receive and transmit a radio frequency; a controller to control the wireless communication module; and a display screen to display information received via the wireless communication module under control of the controller.

More specifically, Schaeffer et al. teaches searching mobile communication terminal (figure 1 – 4 item 48) having a digital camera (figures 1 – 4 item 10), comprising: a wireless communication module to receive and transmit a radio frequency (figure 4 items 54 and 66); a controller to control the wireless communication module (figure 4 item 62); and a display screen to display information received via the wireless communication module under control of the controller (figure 1 item 56).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Schaeffer et al. with the teachings of Sotoda et al. to provide a way to transfer images to a remote location quickly and easily.

Regarding **claim 48**, as mentioned above in the discussion of claim 35, Sotoda et al. in view of Schaeffer et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches to recognize the at least one photographic object comprises: detecting a region corresponding to the at least one photographic object (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; also column 12 lines 49 *et seq.* and column 15 liens 6 *et seq.*; means for recognizing an object (a human face, for example)); and calculating the size of the region according to a number of pixels occupied by the at least one photographic object (figures 11 and 16 and column 12 lines 49 *et seq.* and column 15 liens 6 *et seq.*; range of colors and area recognition; also column 12 lines 49 *et seq.* and column 15 liens 6 *et seq.*; means for recognizing an object (a human face, for example); also column 7 lines 17 *et seq.*; size).

Regarding **claim 49**, as mentioned above in the discussion of claim 48, Sotoda et al. in view of Schaeffer et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches that all pixels distributed within the region are counted in the first mode while a portion of pixels distributed within the region is counted in the second mode (column 8 lines 43 – 56, column 14 lines 21 – 27, column 22 lines 15 - 23; user controlled also figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; this region can be considered a normal region; also column 12 lines 49 *et seq.* and column 15 liens 6 *et*

seq.; means for recognizing objects (human face, for example); also column 7 lines 17 *et seq.*; size).

Regarding **claim 50**, as mentioned above in the discussion of claim 48, Sotoda et al. in view of Schaeffer et al. teaches all of the limitations of the parent claim. Additionally, Sotoda et al. teaches at least one photographic object includes a human face (figures 12 (a) item 33, figure 12(b) item 35, figure 15 item 41, and figure 34 items 131 – 135; zoom in on specific region; also column 12 lines 49 *et seq.* and column 15 lines 6 *et seq.*; means for recognizing an object (a human face, for example)).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to USMAN KHAN whose telephone number is (571)270-1131. The examiner can normally be reached on Mon-Fri 6:45-3:15.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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